

## HAZARD ALERT

February 2015

### **Worker Exposure to Crystalline Silica during Fabrication of Engineered Stone Countertops**

In May 2014, the Texas Department of State Health Services was notified of the first case of silicosis reported in the United States associated with silica dust exposure during fabrication of engineered stone countertops.<sup>i</sup>

Silicosis is an irreversible and often-fatal lung disease caused by inhalation of very fine silica particles. Workers may be exposed to dangerous levels of silica dust during fabrication of granite and engineered stone counter tops. The National Institute for Occupational Safety and Health has set a recommended exposure limit (REL) of 0.05 mg/m<sup>3</sup> as a time-weighted average concentration for a 10-hour workday during a 40-hour workweek.<sup>ii</sup> Silica dust in excess of the REL may be generated by grinding, cutting, routing, drilling, chipping, or polishing on engineered stone, granite, and other stone materials containing crystalline silica.

### **Silicosis Prevention**

**Silicosis can be prevented by use of appropriate engineering controls.** One of the most common and effective ways to prevent dust from becoming airborne is by applying water (by using water-fed tools or other methods) at the point of operation.

When engineering controls are available or do not sufficiently reduce the amount of airborne silica dust, workers should be provided with Personal Protective Equipment (PPE). Anyone at the worksite should receive training on silica-related health risks, engineering controls, and proper use of PPE.

#### **Appropriate engineering controls include:**

- Local exhaust ventilation.
- Wet cutting and grinding methods.
- Use and maintenance of dust collection systems.
- Ongoing air monitoring to make sure controls are keeping enough dust out of the air.

#### **To prevent generation of airborne particulates:**

- Clean up using a hose or wet wipes instead of compressed air.
- Use a HEPA-filtered vacuum or wet sweeping instead of dry sweeping.

**When PPE is required** (*to be used as secondary protection when engineering controls do not remove enough dust from the air*):

- Use respirators approved for protection against silica, in accordance with the OSHA Respiratory Protection standard. Information can be found at:  
<https://www.osha.gov/SLTC/respiratoryprotection/>

**Other measures to protect worker health:**

- Mark the boundaries of work areas where workers may be exposed to airborne silica particles.
- Do not eat, drink or smoke near crystalline silica dust.
- Wash hands and face before eating, drinking or smoking away from exposure area.
- Use washable protective clothing that can be removed when leaving the worksite.

**Additional Resources**

<https://www.osha.gov/Publications/silicosis.html>

<http://blogs.cdc.gov/niosh-science-blog/2014/03/11/countertops/>

<http://www.cdc.gov/niosh/topics/silica/default.html#recc>

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<sup>i</sup> Friedman, GK, *et al.* Silicosis in a Countertop Fabricator — Texas, 2014. MMWR Morb Mortal Wkly Rep 2015;64:129-30.

<sup>ii</sup> NIOSH Pocket Guide to Chemical Hazards. Accessed 2/10/2015 at <http://www.cdc.gov/niosh/npg/npgd0684.html> .